

02.06.2010 / Valby

GIS

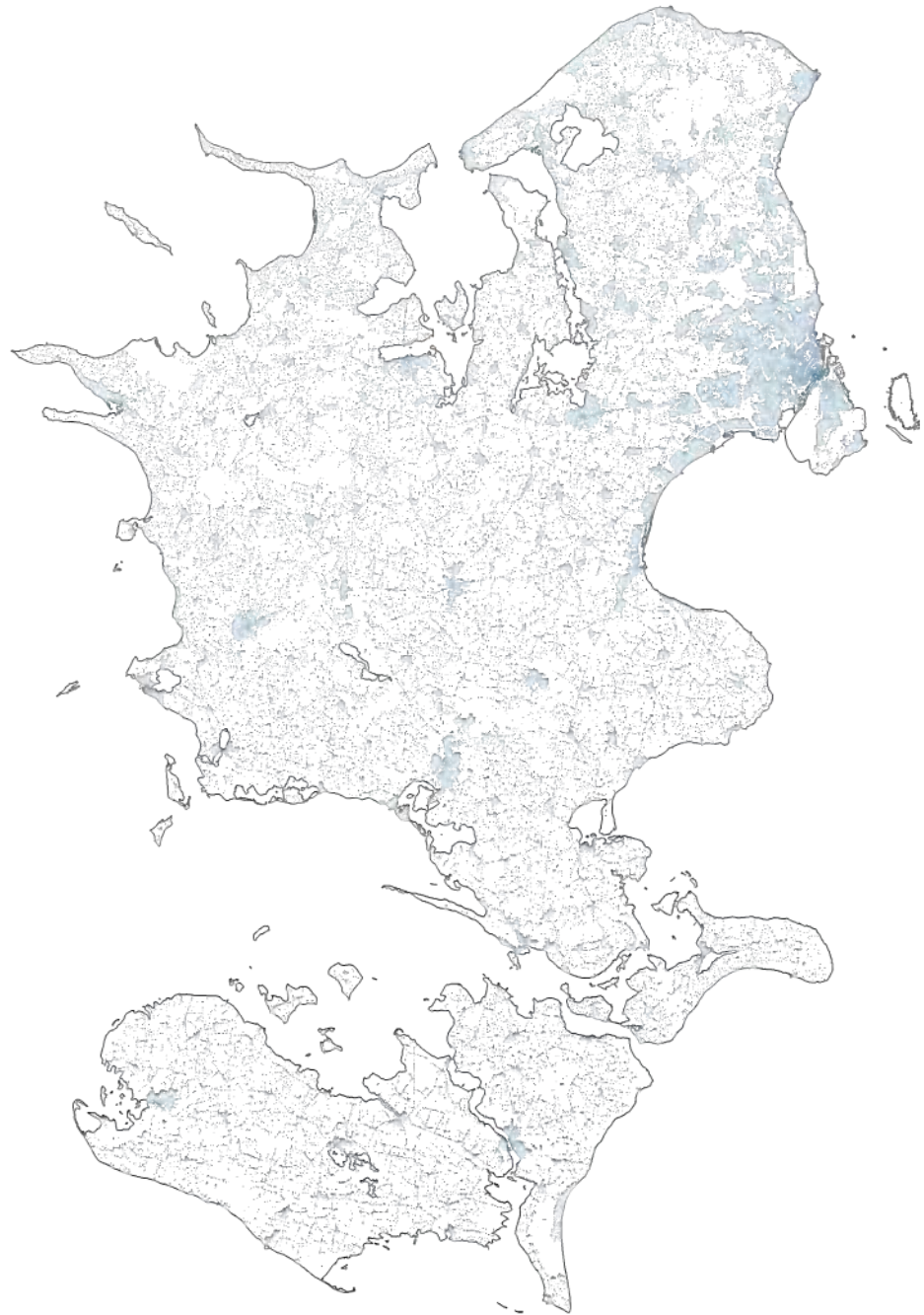
- How to put traffic planning on the map

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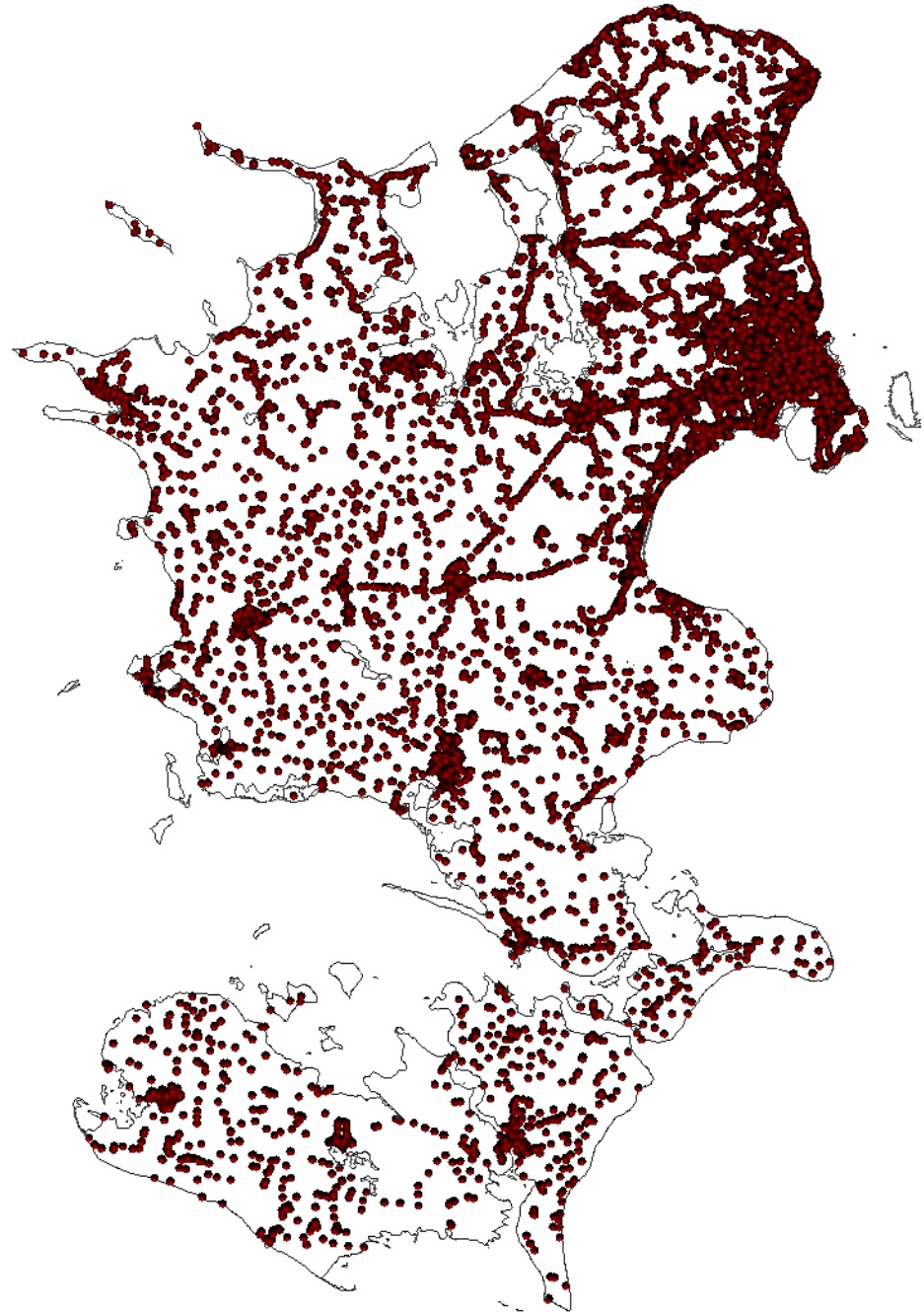
- **Short introduction to Movia**
- **Our data and how we use it**
- **How to put traffic planning on the map.**
- **What's next?**



- 3 public transportation agencies.
- 2 regions
- 45 municipalities
- 2,4 mio. inhabitants
- 1,2 mio. workplaces
- 272.000 training places
(from 8th grade. – Ph.d)



- 9 local train lines
- 120 local train stations
- Almost 550 busroutes.
- About 16.000 bus stops
- 4 ferrys
- 180 mio. passengers in 2009.



Data Sources



Data sources

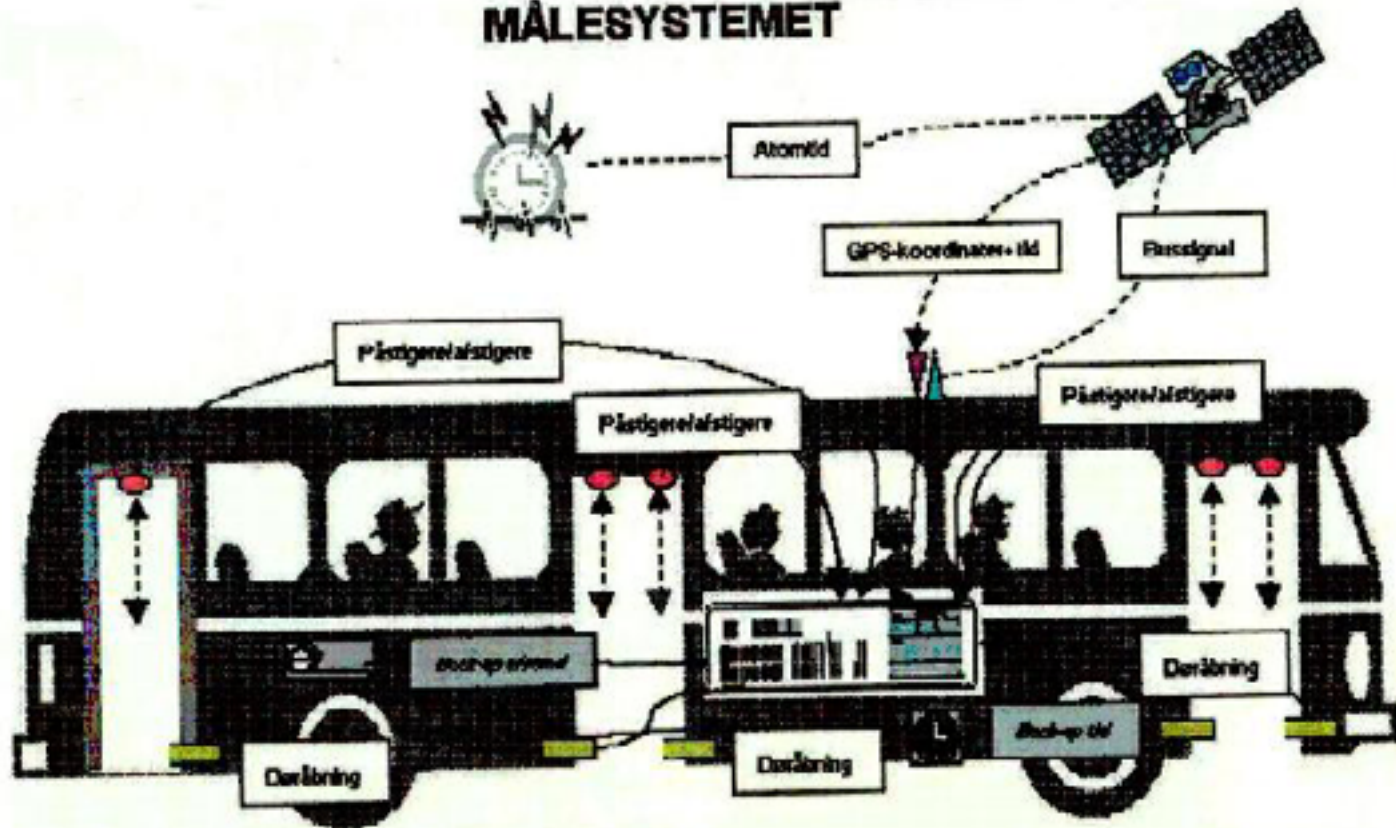
Driving times


- Bus-PC
- Communication and Fleet Management System
- A-bit


Passenger


- Bus-PC
- Manual counts
- PDA (901, 902, 903, 904)


MÅLESYSTEMET




 Infraröd sensor


 Dörrkontakt


 GPS-sender/modtager

 Atomur

 GPS-satellit

 Backup-ur i BusPC

 Triptæller (odometer)

 BusPC

A white triangle pointing downwards is located on the left side of the slide.

Data can be used for...



Driving times

- Regularity
- Identification of problems
- Project evaluation
- Traffic monitoring



Passengers

- Capacity
- Estimation
- Evaluation

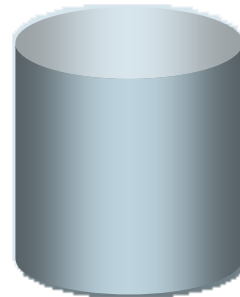
How to put traffic planning on the map

Surveying



The use of GIS at Movia

PubTrans



Real time for customers

Planning

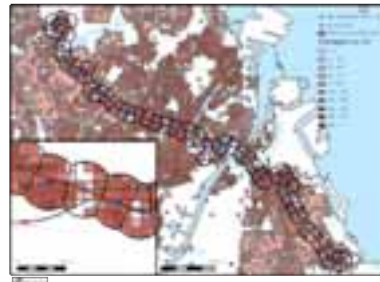
GeoTransit



Real time for operators



Minor changes

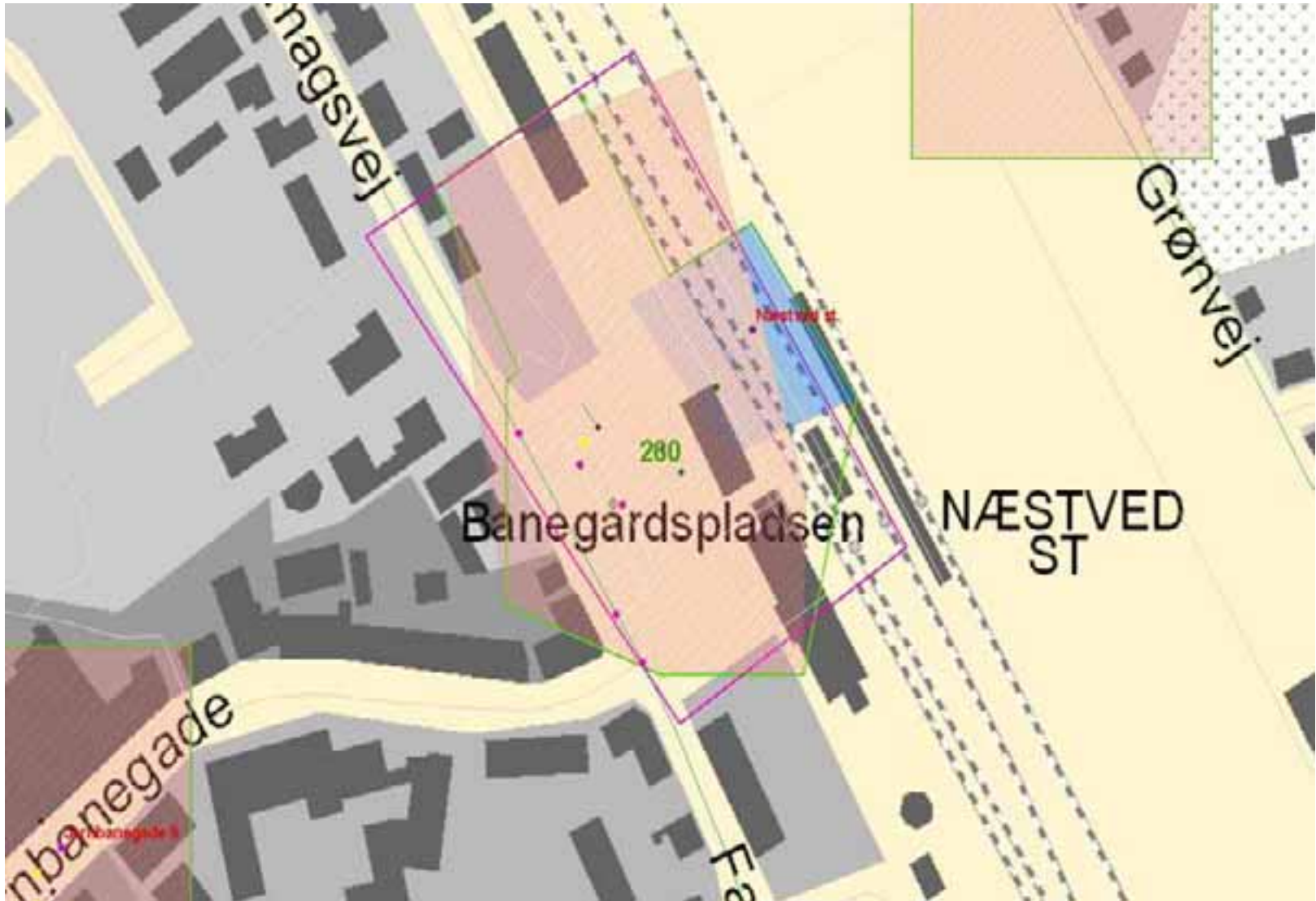


Analysis

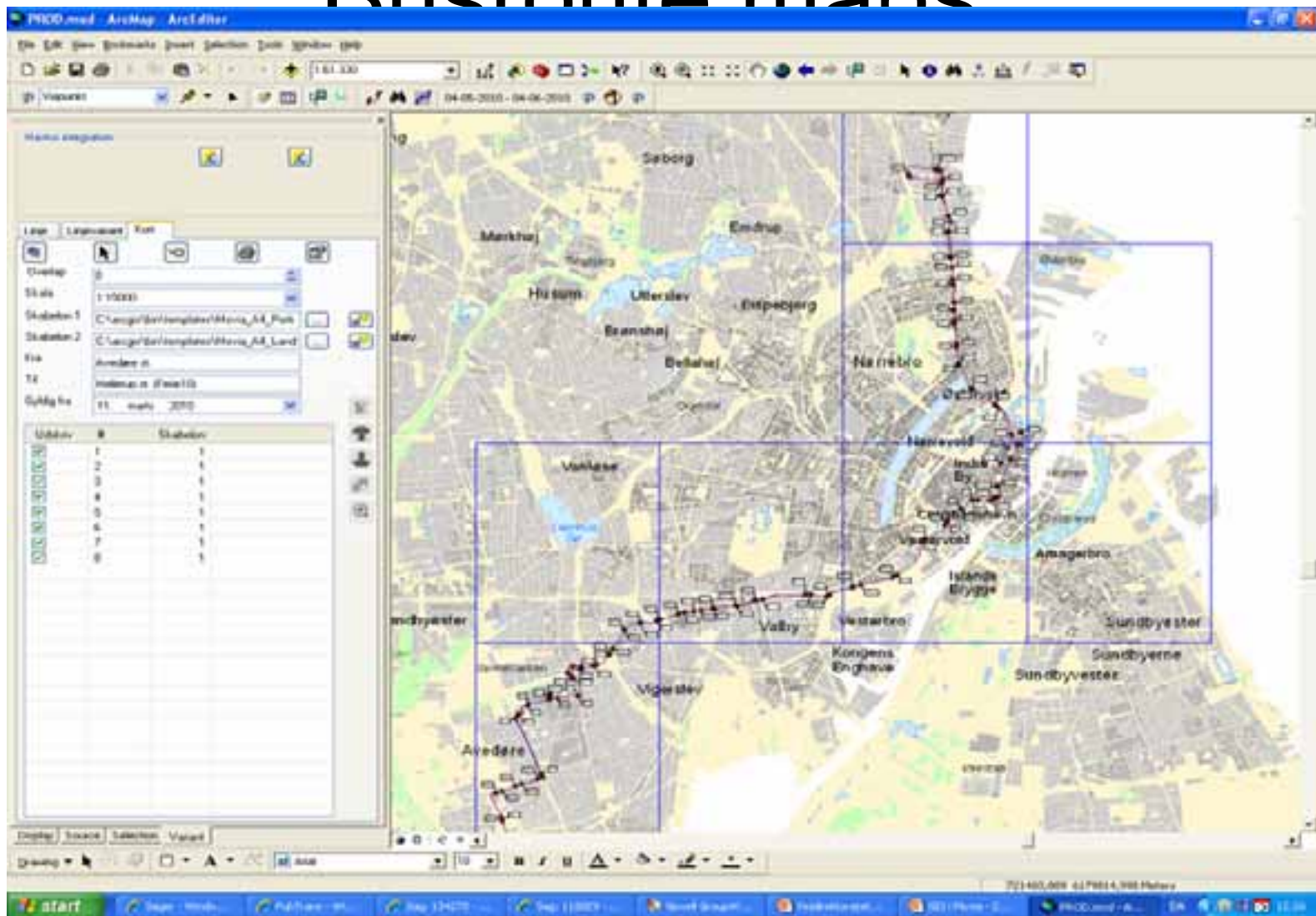


Data for
Travel Planner

Geotransit



Busroute maps



Busroute maps



- Shows the route and stops for a specific line.
- Used by the bus drivers.

Geotransit

- Geocodes all busstops and busroutes
- Possible to withdraw data without having to pairing it up with SQL's. Ensures that only valid data will be collected.
- Contains data of traveltime and distance between stops.
- Generates busroute maps

Visfrem

VisFrem Analyse

Analyse Periode Tid Kommuner Linjer Linjevarianter Ture Stop Visning

Analyse	Data	Symbolisering	Datakilde
POMS	Stoppested	Stoppesteder	BusPc-Opregnede
Nettohastighed	Strækning	Blå, 2 mm	BusPc-Opregnede

Foregående Næste Ryd alt

Tilføj analyse

Datakilde: BusPc-Opregned

Data: Strækning

Analyse: Planlagte ture

Agg: Passagerbelastning

Symbolisering:

- Blå, 2 mm
- cla nettohastighed
- Grøn, 1 mm
- MJO Nettohastighed
- Nettohastighed
- Passagerbelægning, linje
- Rød, 3 mm
- Sort, 4 mm
- Strækning
- Strækninger slope legend I
- Strækninger slope legend I
- VisFrem, forskudt 1,5
- VisFrem, forskudt 1

Analysen indeholder ingen metadata.

OK Fortryd

Visfrem

Movia - VisFrem Analyse

VisFrem Analyse movia

Analyse **Periode** Tid Kommuner Linjer Linjevarianter Ture Stop Visning

Periode

Fra 01-03-2009

Til 28-03-2009

Fravælg...

marts 2009

ma	ti	on	to	fr	lø	sø
23	24	25	26	27	28	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

l dag: 31-05-2010

Bereg

In

lativ forskel Sum i forhold til:

Fravælg...

Foregående Næste Ryd alt Udfør Luk

Visfrem

VisFrem Analyse

Udvælgelse


- Samtlige
- Individuelle

Produkt	Operatør	Linjenr.	PubTrans
ALM	200	123	0123
ALM	200	136	0136
ALM	200	141	0141
ALM	200	143	0143
ALM	200	149	0149
EBUS	200	154E	0154
EBUS	200	548E	0548
EBUS	200	549E	0549
NATBUS	200	93N	0093

Foregående Næste Ryd alt Udfør Luk

Visfrem

Movia - VisFrem Analyse

VisFrem Analyse 

Analyse Periode Tid Kommuner Linjer Linjevarianter **Ture** Stop Visning

Dagtype	Linje	Fra	Til	Afgangstid	Antal stop	Retning
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 00:22	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 05:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 05:45	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 06:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 06:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 06:45	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 07:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 07:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 07:45	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 08:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 08:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 08:45	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 09:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 09:25	59	2
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Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 10:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 10:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 10:45	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 11:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 11:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 11:45	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 12:05	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 12:25	59	2
Hverdag	123	Ålholm Plads	Roskilde st., Busterminalen	31-05-2010 12:45	59	2

Udvælgelse
 Samtlige
 Individuelle

Foregående Næste Ryd alt Udfør Luk


Visfrem

The screenshot displays the 'Movia - VisFrem Analyse' application window. The title bar includes standard window controls and the 'movia' logo. Below the title bar, there are several tabs: 'Analyse', 'Periode', 'Tid', 'Kommuner', 'Linjer', 'Linjevarianter', 'Ture', 'Stop', and 'Visning'. The 'Stop' tab is currently selected. The main area contains a table with the following columns: 'Kommune', 'Stoppestedsnr.', 'Stopgruppe', 'Sekvens', 'Linje', 'Stoppested', and 'Tjekpunkt'. The table lists six bus stops in Albertslund, with the stop at 'Albertslundvej' (stop number 4152) selected, indicated by a checkmark in the 'Tjekpunkt' column. To the right of the table, there is a 'Udvælgelse' (Selection) section with two radio buttons: 'Samtlige' (All) and 'Individuelle' (Individual), with 'Individuelle' being the selected option. At the bottom of the window, there are five buttons: 'Foregående', 'Næste', 'Ryd alt', 'Udfør', and 'Luk'. The status bar at the very bottom shows the text '10:00:00'.

Kommune	Stoppestedsnr.	Stopgruppe	Sekvens	Linje	Stoppested	Tjekpunkt
Albertslund	4150	Roholmsvej	20000	123	Roholmsvej	<input type="checkbox"/>
Albertslund	4151	Renne Allé/Roskildevej	21000	123	Renne Allé	<input type="checkbox"/>
Albertslund	4152	Albertslundvej	22000	123	Albertslundvej	<input checked="" type="checkbox"/>
Albertslund	4153	Vridsløselille Skole	23000	123	Vridsløselille Skole	<input type="checkbox"/>
Albertslund	4154	Roskildevej/Vridsløsevej	24000	123	Vridsløsevej	<input type="checkbox"/>
Albertslund	4156	Store Vejleå	25000	123	Store Vejleå	<input type="checkbox"/>

Visfrem

Movia - VisFrem Analyse

VisFrem Analyse 

Analyse Periode Tid Kommuner Linjer Linjevarianter Ture Stop **Visning**

Indstillinger

Skalering Gennemsnit/dag

Lagseparation Ingen

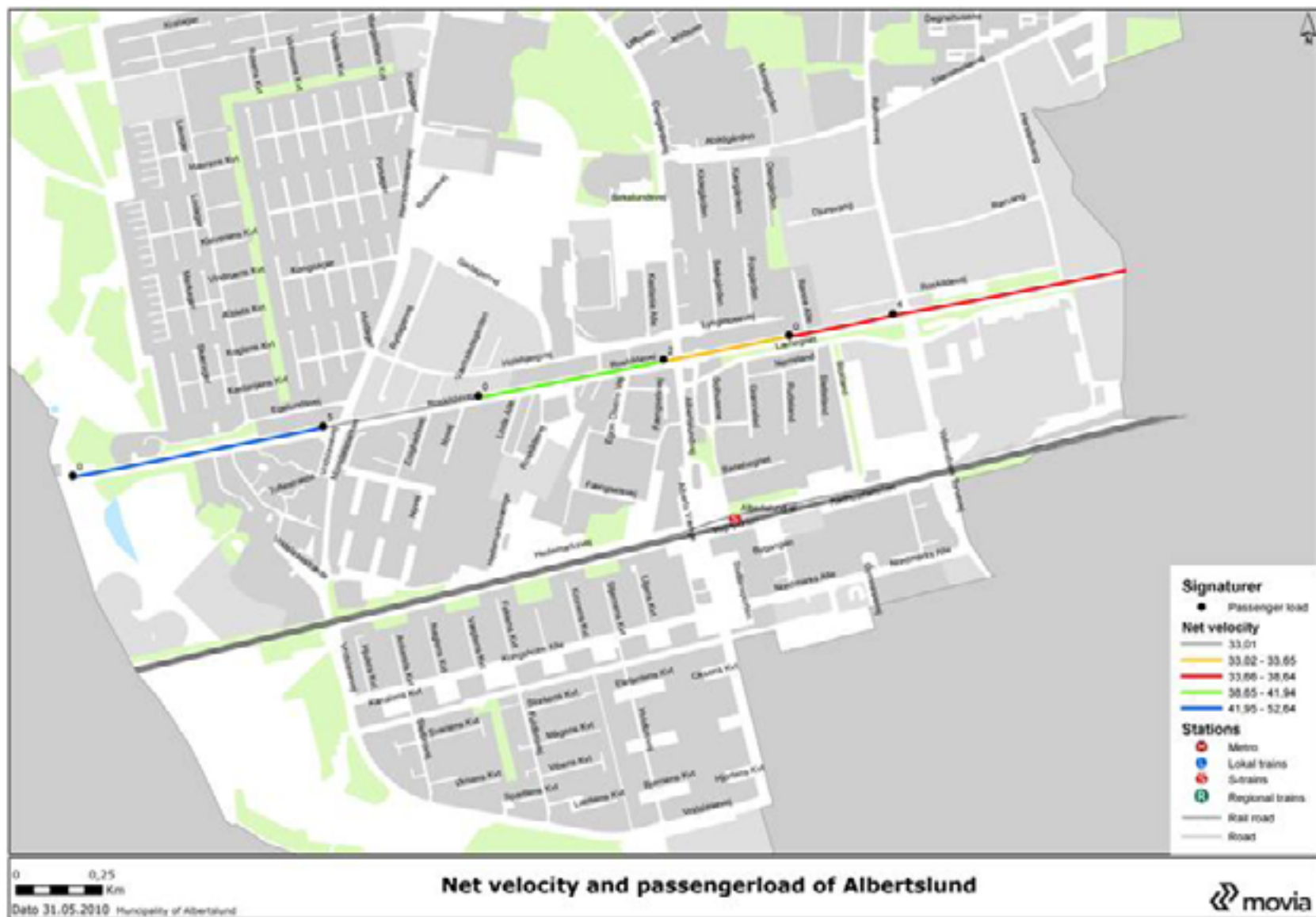
Retningsvisning Vis hver retning selvstændigt

Dubletvisning (ikke relevant hvis mere end én linje er valgt - i så fald vises dubletter aldrig)

Vis dubletter

Foregående Næste Ryd alt Udfør Luk

■■■■■



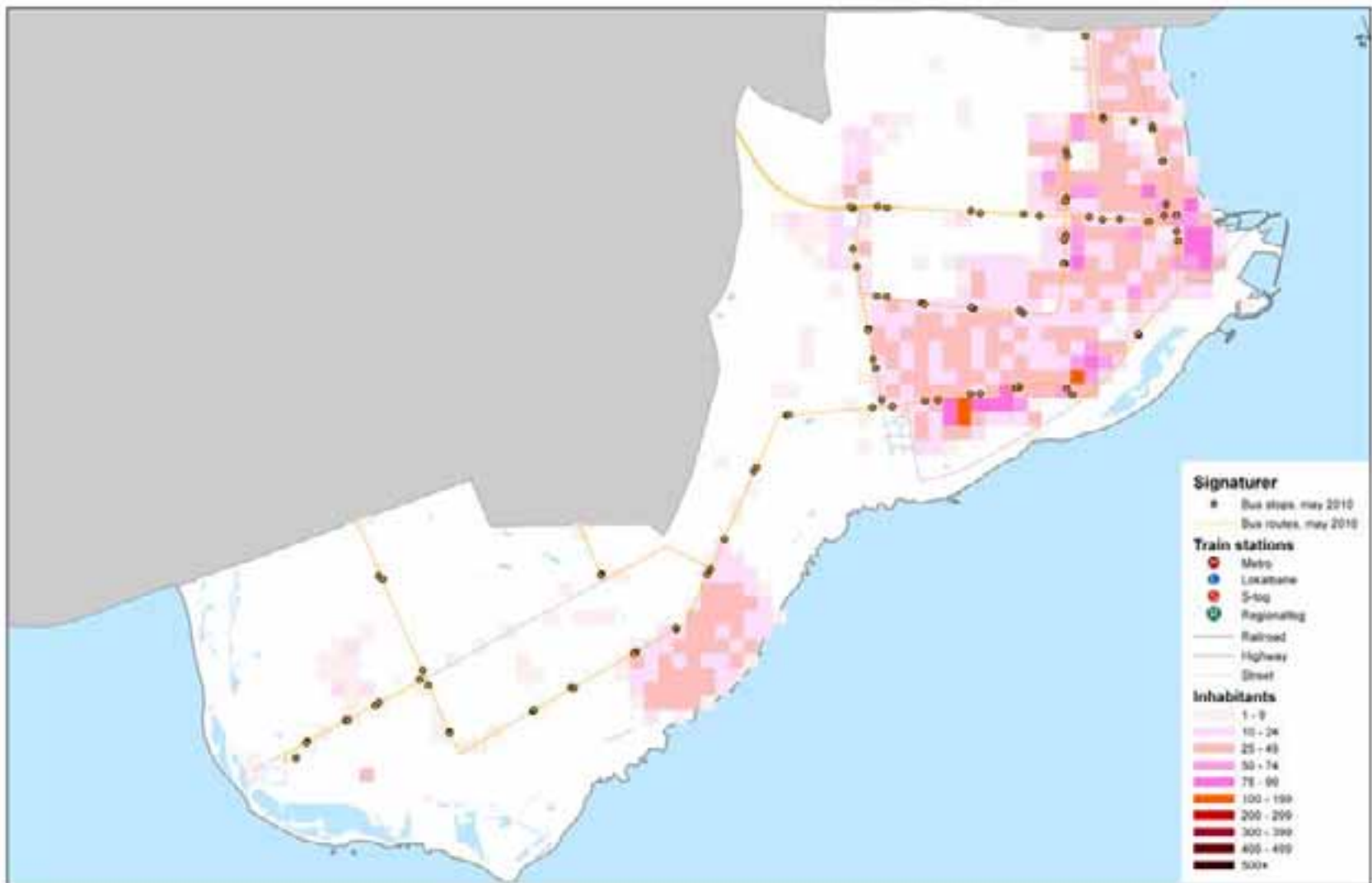
Pros with Visfrem



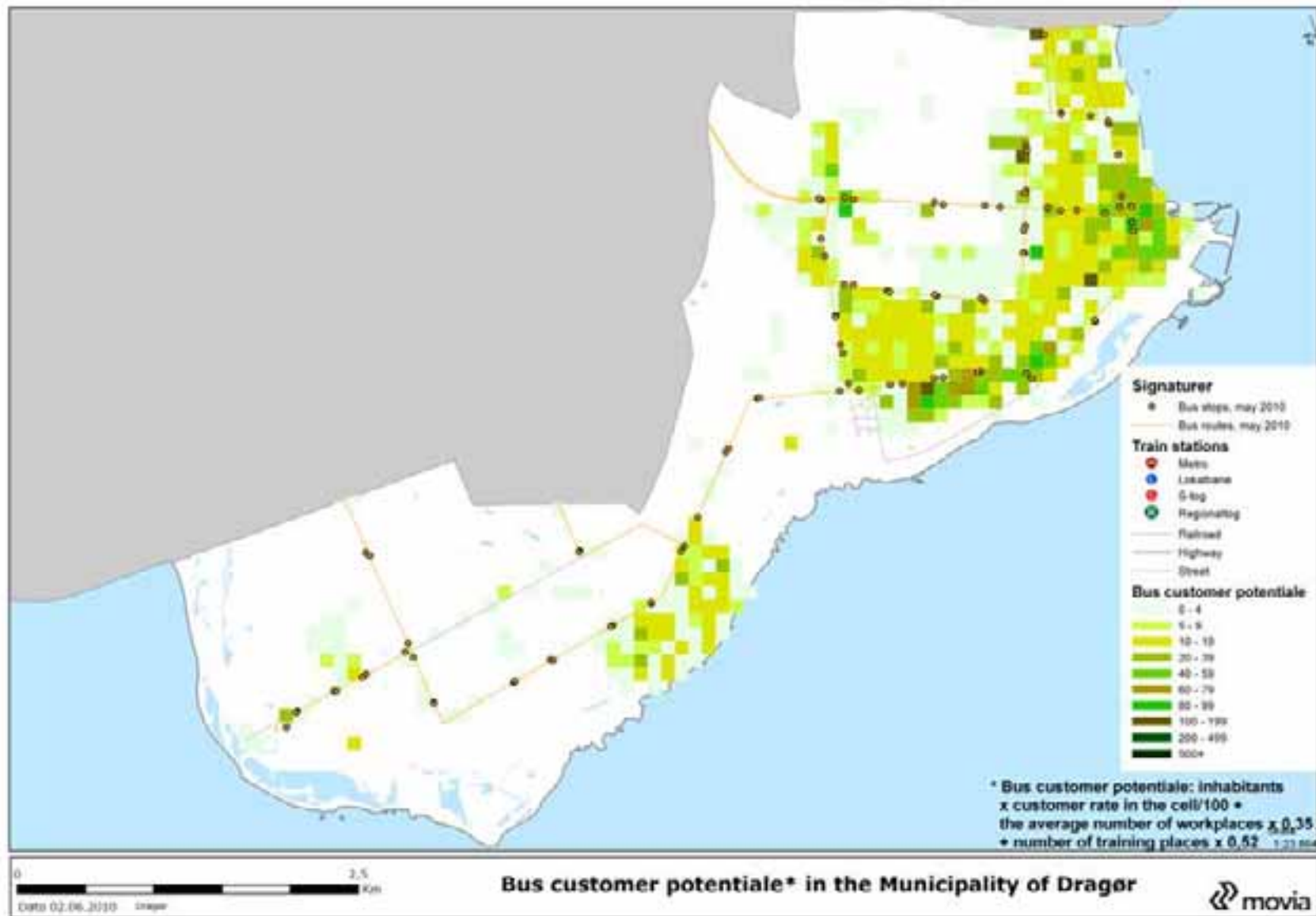
- Saves time.
- Doesn't demand expensive courses – just the basic knowledge of GIS.
- Visualize a number a different types of data.
- Ready to use products.

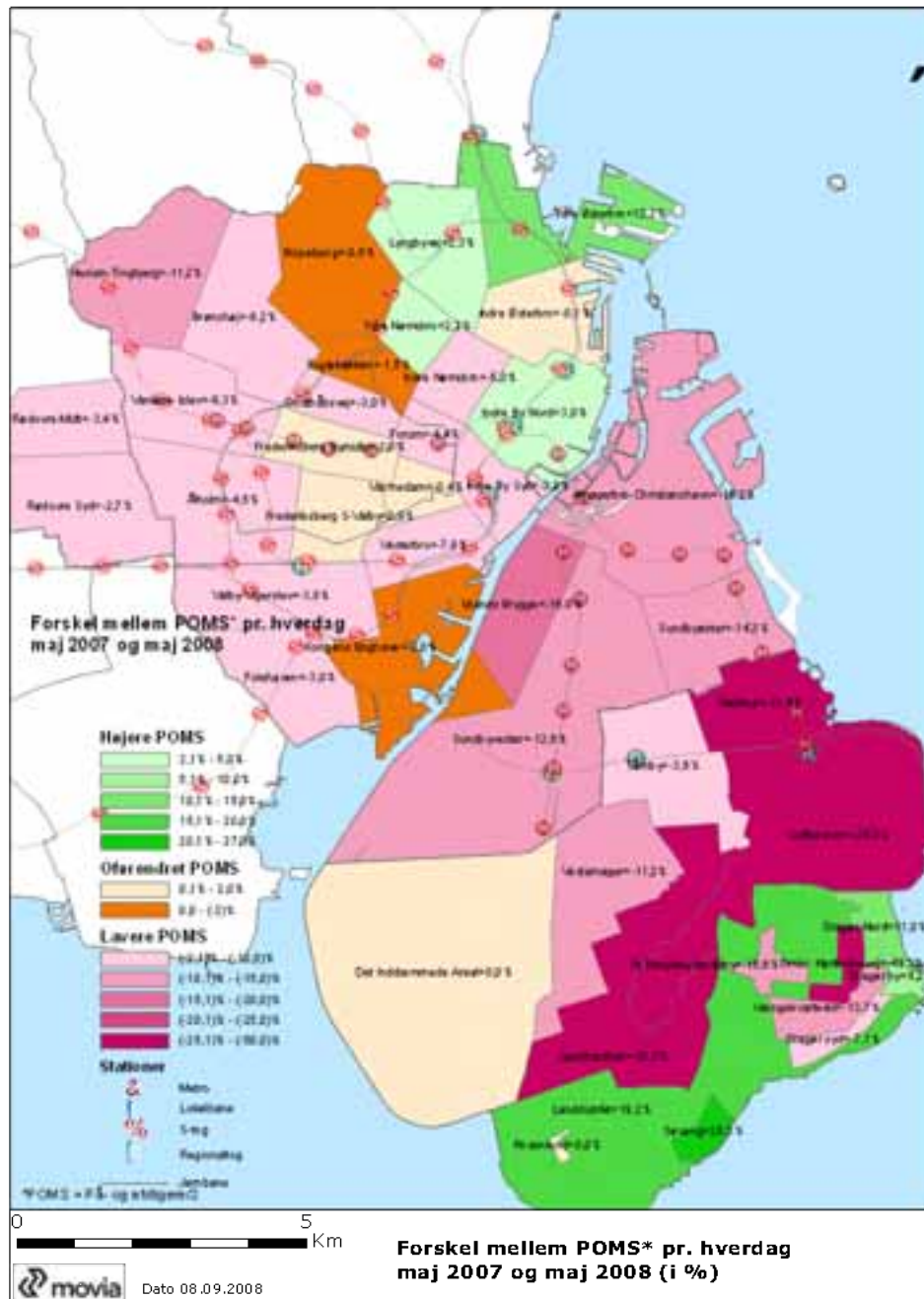
Squarenet data

- Data from Denmark's statistics
- Squares defined by KMS
- 2 sizes; 328x328 feet and 0,62x0,62 miles
- Maps inhabitants, workplaces and bus customer potential (where can we find new customers)



Inhabitants in the Municipality of Dragør









What's next?



WebGIS, soon...

- ESRI ArcGIS Server
- Web application with login
- Internal users
 - Planners
 - Marketing
 - Managers
- External users
 - Officials
 - Consultants
 - Contractors
 - Students
 - Municipalities



Benefits

- Easy access to data and mapmaking
 - for "everyone"
- Developing new tools
 - for "everybody", not just for single purposes